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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/595,984
Filing Date: February 15, 2007
Appellant(s): EKER ET AL.

Ronald S. Liu (64,170)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/25/2011 appealing from the Office action mailed 04/04/2011.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have bearing on the board's decision in the pending appeal:

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The evidence relied upon is as follows:

Levi et al. (US 6,804,778)

Gary et al. (US 5,699,509)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Levi et al. (US 6,804,778), hereafter "Levi" in view of Gary et al. (US 5,699,509), hereafter "Gary"

Regarding claim 22. Levi discloses a method of differentially updating an image of stored data in a computing system from a first data version to an updated data version, the method comprising the steps of:

detecting whether the image of stored data in a data store of the computing system includes one or more corrupted memory blocks having stored therein data that is inconsistent with the first data version; (Abs; Fig 1; Fig 2B - Fig 5; Col 2, lines 38-59; Col 3, lines 20-55; Col 4, lines 24-61; Col 5, lines 1-11; Col 6, lines 40-64;

receiving dedicated differential update instructions, wherein
the dedicated differential update instructions comprise differential update instructions used to generate the updated data version and differential update instructions used to repair the data that is inconsistent with the first data version, (Col 2, lines 38-59; Col 3, lines 43-55; Col 4, lines 24-61; Col 12, lines 47-63 Note that the resubmission of corrupt blocks constitutes a “differential update" as the corrected blocks constitute the differences between the versions. Further, because no verbiage is used which differentiates the result of the differential update on the first version and a non-corrupt first version, the detection of corrupt version and the correction to the non-corrupt version reads upon this limitation) and

the dedicated differential update instructions are generated in response to detecting the image of stored data in the data store of the computing system includes one or more

corrupted memory blocks having stored therein data that is inconsistent with the first data version; (as above) and

loading the dedicated differential update instructions into the data store of the computing device; (Col 2, lines 38-59; Col 3, lines 43-55; Col 4, lines 24-61; Col 12, lines 47-63, Note they must be loaded to run)

repairing, when generating the updated data version, any such detected corrupted memory block;
wherein the image of stored data in the data store is updated in-place such that data of the first data version is reused and reorganized to generate the updated data version. (Col 2, lines 38-59; Col 3, lines 43-55; Col 4, lines 24-61; Col 12, lines 47-63 Note only corrupted blocks are replaced and the remaining data is untouched and remains in-place.

Note that the implementation of Levi is directed towards a web server and not specifically to a mobile terminal having flash memory.

Gary is directed towards error detection within a personal computing system. (Abs) Because personal computing systems at the time of the invention encompass laptops and personal digital assistants, it would have been obvious to enable error detection in a mobile device with flash detection. Further, it would have been obvious to one of

ordinary skill in the art at the time of the invention to use the error detection of Gary in the same way as Levi and produce a differential update to correct corrupted data blocks

Regarding claim 23, claim 23 is rejected for substantially the same reason as claim 22 above.

Regarding claim 24, claim 24 is rejected for substantially the same reason as claim 22 above.

Regarding claim 25, claim 25 is rejected for substantially the same reason as claim 22 above. Note the update is specifically to repair corrupt data blocks.

Regarding claim 26, claim 26 is rejected for substantially the same reason as claim 22 above. Note the corrected information is transmitted from the secure source and the "transparent unit" detects and generates the updates. The "transparent unit" may be a local software module or a separate piece of hardware according to Levi (Col 14, lines 60-67)

Regarding claim 27, claim 27 is rejected for substantially the same reason as claim 22 above. Note the corrected information is transmitted from the secure source and the "transparent unit" detects and generates the updates. The "transparent unit" may be a

local software module or a separate piece of hardware according to Levi (Col 14, lines 60-67)

Regarding claim 28, while Levi does not specifically disclose transmission over a wireless communication link, WiFi and cellular communication standards are well known in the art at the time of the invention and it would have been both obvious and trivial for one of ordinary skill in the art at the time of the invention to communicate uninhibited through a known wireless standard such as 3g or 802.11 a/b or g.

Regarding claim 29, claim 29 is rejected for substantially the same reason as claim 22 above. Note Levi specifically discusses IP port addressing and web communications.

Regarding claim 30, claim 30 is rejected for substantially the same reason as claim 22 above. Note detection occurs on the “transparent unit" which may be a local software module or a separate piece of hardware within the implementation of Levi and on-device within Gary. Further Levi makes requests of uncorrupted data from a secure source which may be remote in certain implementations. With this in mind it is at least obvious to one of ordinary skill in the art at the time of the invention to detect corrupt memory blocks locally and send information about them to a remote source for retrieval of uncorrupted data.

Regarding claim 31, claim 31 is rejected for substantially the same reason as claim 30 above. Note in implementations where the "transparent device" is remote, information about the image of the data is sent to this remote data processing system which then detects errors.

Regarding claim 32, Levi as modified discloses the step of detecting further comprising calculating a number of checksums by the processor of the mobile terminal, wherein each checksum corresponds to a corresponding memory block of data stored in the flash memory of the mobile terminal; and
comparing the calculated checksums with a number of reference checksums to identify any corrupted memory block of data. (Col 7, lines 11-32; Col 10, line 42 – Col 11, line 14)

Regarding claim 33, Levi as modified discloses the reference checksums being stored in the flash memory of the mobile terminal and further comprising the step of performing the step of comparing by the mobile terminal. (Col 7, lines 45-52)

Regarding claim 34, Levi as modified discloses the step of integrity protecting the reference checksums stored in the mobile terminal by a message authentication code. Col 5, lines 1-11; Col 7, lines 11-65)

Regarding claim 35. Levi discloses storing the reference checksums on a remote data

processing system wherein the transmitted information comprises the calculated checksums; (Col 7, lines 33-44) and

wherein the detecting step further comprises the step of comparing the transmitted calculated checksums by the remote data processing system with the number of reference checksums stored on the remote data processing system. (Col 5, lines 1-11; Col 7, lines 11-65 Note this occurs when the transparent unit is remote)

36. (Previously Presented) The method according to claim 32, wherein the calculating step further comprises the step of calculating the checksums as a cryptographically strong one-way hash function of the corresponding memory block of the image of the stored data. (Col 7, lines 11-32)

Regarding claim 37, claim 37 is rejected for substantially the same reason as claim 22 above.

Regarding claim 38, claim 38 is rejected for substantially the same reason as claim 22 above.

Regarding claim 39, claim 39 is rejected for substantially the same reason as claim 22 above.

Regarding claim 40, claim 40 is rejected for substantially the same reason as claim 22 above.

Regarding claim 41, claim 41 is rejected for substantially the same reason as claim 28 above.

Regarding claim 42, claim 42 is rejected for substantially the same reason as claim 26 above.

(10) Response to Argument

A) With respect to appellant's argument that "Levi and Gary, taken alone or in any permissible combination, fail to disclose, teach, or even suggest 'receiving dedicated differential update instructions' wherein the dedicated differential update instructions comprise differential update instructions used to generate the updated data version and differential update instructions used to repair the data that is inconsistent with the first data version,' as recited in independent claim 22:" The argument is not deemed to be persuasive as the disclosure of Levi and Gary as modified does indeed disclose the above limitation for the reasons below:

Firstly, the examiner would like to discuss the language as claimed. With respect to the limitations of claim 22, there are only two claimed data versions throughout including only a “first data version” and an “updated data version” and no limitation is given in to what constitutes an update - only that one occurs and by limitation it is accomplished via a "differential update." Furthermore, the specific limitation being referred to is as follows:

> “The dedicated differential update instructions comprise differential update instructions used to generate the updated data version and differential update instructions used to repair the data that is inconsistent with the first data version.”

While these differential update instructions accomplish two tasks, **by limitation there is no language to guarantee that these are separate types of instructions** as the appellant attempts to argue. In fact, any instruction capable of repairing a corrupted segment of data (corrupted from a “first data version”) to an updated, uncorrupted state (“updated data version”) comprises both "differential update instructions used to generate the updated data version and differential update instructions used to repair the data that is inconsistent with the first data version” as both tasks are accomplished by the differential update instructions.

The examiner would now like to point out key sections of Levi. Col 2, lines 38-58 as explicitly cited by examiner states:

> An aspect of some preferred embodiments of the invention relate to **data redress by an output monitor.** In a preferred embodiment of the invention, **a copy of some or all the data** which can be transmitted is stored at a secure location. When data is proscribed from being transmitted, for example for reason of it being tampered, the output monitor obtains a "clean" copy of the data from the secure location **and transmits the clean data instead.** In some cases, the clean data

> may be more limited than the original data, for example a message which indicates that data is not being transmitted. Alternatively, proscribed data is not transmitted, so that transmitted WWW pages contain blank areas. **Alternatively, a standard message is transmitted, to fill in the blank areas.** Alternatively or additionally, **the transmitted WWW page is modified** so that the page appears not to be missing data and/or so that the distortion of the page is minimized. Alternatively, the altered data is allowed to go out, **with an additional message,** for example, to warn the user of possible corruption. An example of such a message is a disclaimer of warranty for the content of the data. Another example of a message is a warning that the data may be incorrect.

The examiner believes the above sections make it clear that a message transmitted by the server of Levi is first vetted by an output monitor and if some of the data within a transmission set is deemed not to pass a corruption or tampering test it is "redressed" either in whole or in part, and the data set is modified to a clean version, to fill in gaps, to alter data to a last-known-state, and / or to provide additional warnings. Furthermore, if there are any doubts as to whether only a portion of the data (i.e. differential vs. full) modification of the data occurs, Levi makes it clear that data occurs as part of a set and thus corruption of data elements are handled individually within the set as disclosed by Levi in Col 3 lines 56-58:

> In a preferred embodiment of the invention, said data is **part** of a data transmission set and wherein redressing comprises modifying said data transmission set.

Note that while the "transmission set" is modified, only the data (i.e. individual elements) are replaced or changed as pointed out above based on detected corruption. Because the data that is called upon is what these individual data components are changed to

and thus dictate how they are changed, they can also both fairly be described as "differential" and "instructions."

Because these updates can easily be adapted not just for signed data in web servers, but for verification of signed or checksummed information in any type of computing system before sending out a set of data by any person of normal skill in the art at the time of the invention, and the data verification process of Levi checks a checksum or signature of data to see if the data stored in a terminal is inconsistent with a "first data verson" and in response updates the data version either back to the correct, but updated data version or to a previous, partial, or specially notated "updated data version" Levi rather clearly discloses:

> "the dedicated differential update instructions comprise differential update instructions used to generate the updated data version and differential update instructions used to repair the data that is inconsistent with the first data version."

B) With respect to appellant's argument that "Levi and Gary, taken alone or in any permissible combination discloses, teaches, or suggests 'generating the differential update instructions based on information about detected corrupted memory blocks, if any'" this being with respect to claim 23. The argument, however is not deemed to be persuasive as the disclosure of Levi and Gary as modified does indeed disclose the above limitation for the reasons below:

Firstly, "memory blocks" are a well appreciated concept within the art and data inherently exists on "memory blocks" of some form as all storage media is broken down into usable clusters or blocks for addressing. For this reason, it is already inherent that signed data which is found to be corrupt includes detection of corruption of all memory blocks that data occupies. Because the appellant defined no information about the granularity of error detection (i.e. file level, block level, bit level etc.) as long as there exists blocks of data which are corrupt and which are corrected, in light of the claimed limitations of the instant application, the granularity is irrelevant.

Furthermore, while the examiner relied upon this inherency within his previous rejection, even if appellant is given the apparent intended meaning of their claimed language (a implementation specifically including a checksum and error detection occurring for each memory block) instead of the broadest reasonable interpretation of the claimed language (i.e. determining any logical subset of blocks with any granularity of checksum information and finding any corresponding set of blocks which correspond to said granularity,) the combination of Levi with Gary is still sufficient to obviate the claimed invention as Gary specifically talks about bit-level checksumming implementation (Abs) as the bit-inverted implementation tracks every bit and if any bit is detected which is out of place (Fig 3; Col 3, lines 57 – 59; Col 5, line 10 – 55.) The examiner would additionally like to note that memory cells are specifically used here thus lending further support to the inherency above. With a simple combination of Levi with Gary, it would have been obvious to one of ordinary skill in the art at the time of the invention to check

data corruption on a block-by-block level and replace information based upon this corruption information as opposed to replacement of entire data files.

For these reasons, the arguments with respect to claim 23 remain unpersuasive.

C) With respect to all remaining arguments:

The remaining arguments with respect to claims 22 appear to deal with the apparent misinterpretation by appellant of the broadest reasonable interpretation which fails to specifically separate “differential update instructions used to generate the updated data version" and "differential update instructions used to repair the data that is inconsistent with the first data version." As this is discussed above with respect to claim 22, in the interest of clarity and conciseness, the examiner will not reiterate the above argument, but instead give guidance back to the discussion of point **A)** made above.

Furthermore, with respect to the remaining arguments with respect to claims 37, 38, 39 and 40, all arguments made with respect to these claims appear to be a near-identical reiteration of arguments made with respect to claim 22. As these arguments are discussed above with respect to claim 22, in the interest of clarity and conciseness, the examiner will not reiterate the above argument, but instead give guidance back to the discussion of point **A)** made above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the board is identified by the examiner in the Related Appeals and Interference section of this examiner's answer.

For the reasons above, it is believed that the rejections should be sustained.

Respectfully Submitted,

/Bruce A Witzenburg/

Examiner, Art Unit 2166

Conferees:

/Etienne P LeRoux/
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